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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/615,471

Applicant(s)

TSIEN ET AL.

Examiner

ALLAHYAR KASRAIAN

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, 9-13, 16, 17 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 9-13, 16, 17 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

1. The present Office Action is in response to Applicant's amendment filed on 07/07/2008. **Claims 1, 3-7, 9-13, 16, 17 and 20** are now pending in the present application. **This Action is made FINAL.**

Response to Arguments

2. Applicant's arguments filed on 07/07/2008 have been fully considered but they are not persuasive.

On page 6-7 of the Applicant's arguments/remarks with respect to claim 1, Applicant argues, "Frixon is very different from Koohgoli, so different that it is non-analogous art. One skilled in the art using common sense would not have looked to Frixon to modify Koohgoli." In response to applicant's argument that Frixon is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Examiner respectfully disagrees with the Applicant's argument since both Koohgoli and Frixon relate to selecting carrier frequencies (or transmission channels). Therefore it would have been obvious to a person of ordinary skill in the art to combine Koohgoli with Frixon in order to reduce and/or prevent interference by selecting a channel frequency having a distance from its neighboring channels to provide a guard band between frequency channels.

Applicant also argues, "only the camera in Frixon carries out a scan and selects an emission frequency. The television plays no role in selecting the emission frequency in Frixon. One skilled in the art using common sense would not have looked to Frixon to modify Koohgoli because the activity all takes place in the camera, and the selection of the emission frequency is not the result of an interaction between two devices."

Examiner respectfully disagrees since both Koohgoli and Frixon presenting how to choose a carrier frequency (or transmission channels) to transmit signals in general. Examiner relies on the method of selecting channel frequency disclosed by Koohgoli and modified by Frixon disregarding whether the type of signal is video, voice, or data, and disregarding if the transmission happens at the video camera, base station or mobile station. The point is how to select a carrier frequency to transmit a signal(s). Therefore it would have been obvious to a person of ordinary skill in the art to combine Koohgoli with Frixon in order to reduce and/or prevent interference by selecting a channel frequency having a distance from its neighboring channels to provide a guard band between frequency channels.

On the last paragraph of page 7 of the Applicant's arguments/remarks with respect to claims 4 and 5, Applicant argues, "The rejection of the features of claims 4 and 5 is not founded on a factual basis such as reference, but rather is supported only by speculation called "design choice" contrary to *In re Warner*." Examiner respectfully disagrees since Koohgoli modified by Frixon disclosed the features of claim 1 for selecting channel within a larger gap. However, Koohgoli modified by Frixon fail to disclose selecting larger gap at higher frequency, it would have been obvious to a

person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of design choice for the channels within close range of frequencies. Moreover, Applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

On page 8 of the Applicant's arguments/remarks with respect to claim 6, Applicant argues, "Claim 6 is dependent on independent claim 1, and recites further features with respect to claim 1. For the reasons stated above with respect to claim 1, the applicants respectfully submit that one skilled in the art using common sense would not have looked to Frixon to modify Koohgoli." Examiner respectfully disagrees since Koohgoli can be modified by Frixon based on how to choose carrier frequency as stated above for rejecting claim 1. Therefore, in order to reject claim 6, it would have been obvious to a person of ordinary skill in the art to combine Koohgoli with Frixon and further with Lopez for purpose of transmitting data or signal on the best pre-examined available carrier channel.

Applicant also argues, "MT5 may suggest a channel to N1 after monitoring various channels, but N1 selects a new frequency based on a criteria not described in Lopez. The monitoring of channels by MT5 does not directly lead to a selection of a new channel, and in fact the new channel selection is not described as result of a scan of

available frequencies." Examiner respectfully disagrees since Koohgoli as modified by Frixon and further modified by Lopes disclosed all the limitations. Lopez clearly shows and discloses a method and apparatus for determining collision when selecting a channel, and in case of detecting collision in the selected channel, requesting a new channel and suggesting a new transmission channel (see FIG. 2, the summary of the invention in lines 46-67 of column 1 and lines 1-3 of column 2). Therefore, in order to reject claim 6, it would have been obvious to a person of ordinary skill in the art to combine Koohgoli with Frixon and further with Lopez for purpose of transmitting data or signal on the best pre-examined available carrier channel.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

On page 9 of the Applicant's arguments/remarks with respect to claim 7, Applicant argues, "Frixon is very different from Choi, so different that it is non-analogous art. One skilled in the art using common sense would not have looked to Frixon to modify Choi." In response to applicant's argument that Frixon is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or,

if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Examiner respectfully disagrees with the Applicant's argument since both Choi and Frixon relate to selecting carrier frequencies (or channel frequencies). Therefore it would have been obvious to a person of ordinary skill in the art to combine Choi with Frixon in order to reduce and/or prevent interference by selecting a channel frequency having a distance from its neighboring channels to provide a guard band between frequency channels.

Applicant also argues, "only the camera in Frixon carries out a scan and selects an emission frequency. The television plays no role in selecting the emission frequency in Frixon. One skilled in the art using common sense would not have looked to Frixon to modify Choi because the activity all takes place in the camera, and the selection of the emission frequency is not the result of an interaction between two devices." Examiner respectfully disagrees since the both Choi and Frixon presenting how to choose a carrier frequency (or transmission channels) to transmit signals in general. Examiner relies on the method of selecting channel frequency disclosed by Choi and modified by Frixon disregarding whether the type of signal is video, voice, or data, and disregarding if the transmission happens at the video camera, base station or mobile station. The point is how to select a carrier frequency to transmit a signal(s). Therefore it would have been obvious to a person of ordinary skill in the art to combine Choi with Frixon in order to reduce and/or prevent interference by selecting a channel frequency having a

distance from its neighboring channels to provide a guard band between frequency channels.

On page 9-10 of the Applicant's arguments/remarks with respect to claims 10 and 11, Applicant argues, "The rejection of the features of claims 10 and 11 is not founded on a factual basis such as reference, but rather is supported only by speculation called "design choice" contrary to *In re Wamer*." Examiner respectfully disagrees since Choi modified by Frixon disclosed the features of claim 7 for selecting channel within a larger gap. However, Choi modified by Frixon fail to disclose selecting larger gap at higher frequency, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies.

On page 10 of the Applicant's arguments/remarks with respect to claim 12, Applicant argues, "One skilled in the art would not be motivated to combine Choi with Frixon for the reasons stated above with respect to claim 7. Lopez was discussed above with respect to claim 6." Examiner respectfully disagrees since Choi can be modified by Frixon based on how to choose carrier frequency as stated above for rejecting claim 7 and the same reason(s) stated for claim 6. Therefore, in order to reject claim 12, it would have been obvious to a person of ordinary skill in the art to combine Choi with

Frixon and further with Lopez for purpose of transmitting data or signal on the best pre-examined available carrier channel.

Applicant also argues, "The office action has not shown Lopez to be compatible with Choi which describes channel measurements by AP and STAs. Lopez is very different from Choi and one skilled in the art would not have been motivated to modify Choi in view of Lopez." In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner respectfully disagrees with the Applicant's argument since Choi as modified by Frixon and further modified by Lopez disclosed all the limitations. Lopez clearly shows and discloses a method and apparatus for determining collision when selecting a channel, and in case of detecting collision in the selected channel, requesting a new channel and suggesting a new transmission channel (see FIG. 2, the summary of the invention in lines 46-67 of column 1 and lines 1-3 of column 2). Therefore, in order to reject claim 12, it would have been obvious to a person of ordinary skill in the art to combine Choi with Frixon and further with Lopez for purpose of transmitting data or signal on the best pre-examined available carrier channel.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was

within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

On page 10-11 of the Applicant's arguments/remarks with respect to claims 13 and 16, Applicant argues, "Frixon does not show "selecting a channel from a channel indicated as available within the larger gap at higher frequency" as indicated in independent claim 13. Therefore, even, as combined, Choi, Sugar, and Frixon do not show all of the features recited in claim 13." Examiner respectfully disagrees since the feature of the claim is rejected based on matter of "design choice".

Applicant also argues, "Frixon is very different from both Choi and Sugar, so different that it is non-analogous art. One skilled in the art using common sense would not have looked to Frixon to modify Choi." In response to applicant's argument that Frixon is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Examiner respectfully disagrees with the Applicant's argument since both Choi and Frixon relate to selecting carrier frequencies (or channel frequencies). Therefore it would have been obvious to a person of ordinary skill in the art to combine Choi with Frixon in order to reduce and/or prevent interference by selecting a channel frequency having a distance from its neighboring channels to

provide a guard band between frequency channels.

Applicant further argues, "The rejection of the features of claims 13 and 16 is not founded on a factual basis such as reference, but rather is supported only by speculation called "design choice" contrary to *In re Wamer*." Examiner respectfully disagrees since it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of design choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

On page 11-12 of the Applicant's arguments/remarks with respect to claims 17

and 20, Applicant argues, "Frixon does not show "selecting a channel from a channel indicated as available within the larger gap at higher frequency" as indicated in independent claim 17. Therefore, even, as combined, Choi, Sugar, and Frixon do not show all of the features recited in claim 17." Examiner respectfully disagrees since the feature of the claim is rejected based on matter of "design choice".

Applicant further argues, "The rejection of the features of claims 17 and 20 is not founded on a factual basis such as reference, but rather is supported only by speculation called "design choice" contrary to *In re Warner*." Examiner respectfully disagrees since it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA

1971).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 1 and 3-5** are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Koohgoli et al. (U.S. Patent # 5,276,908)** (hereafter Koohgoli) in view of **Frixon (U.S. Patent # 5,138,456)**.

Consider **claim 1**, Koohgoli discloses a method, comprising:

scanning available channels (FIG. 3a, 3b and lines 3-5 of column 7 where it says, "In operation, when a call set-up is attempted between the base station 30a and the subscriber terminal 30b, all available traffic channels are scanned.");

measuring a received signal power level for the channels scanned in said scanning (FIGS. 3a, 3b, 4a and 4b, lines 3-5 of col. 7);

comparing the measured received signal power level to a threshold value to provide a difference (col. 7 lines 5-26);

if the difference is greater than a predetermined value, then indicating the channel as occupied, otherwise indicating the channel as available (col. 7 lines 5-26);

However, Koohgoli fails to disclose determining a larger gap between available channels; and selecting a channel within the larger gap.

In the same field of endeavor, Frixon discloses determining a larger gap between available channels; and selecting a channel within the larger gap (col. 4 lines 38-44).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time the invention was made to incorporate channel selection by choosing a channel(s) within larger frequency spacing between available channels as taught by Frixon to the channel selecting method and apparatus shown by Koohgoli disclosed for purpose of reducing and preventing interference by selecting a channel having a distance from its neighboring channels to provide a guard band between frequency

channels.

Consider **claim 3 as applied to claim 1 above**, Frixon discloses said selecting includes selecting a channel at a midpoint within the larger gap (col. 4 lines 38-44).

Consider **claim 4 as applied to claim 1 above**, Koohgoli as modified by Frixon disclose the claimed invention except in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a channel within the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

Consider **claim 5 as applied to claim 1 above**, Koohgoli as modified by Frixon disclose the claimed invention except in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a

channel within a midpoint of the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel within a midpoint of the larger gap at a higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected applicant's invention to perform equally well with either selecting a channel within midpoint of the larger gap at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels with close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

5. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Koohgoli et al. (U.S. Patent # 5,276,908)** (hereafter Koohgoli) in view of **Frixon (U.S. Patent # 5,138,456)** further in view of **Lopez (U.S. Patent # 7,177,291 B1)**.

Consider **claim 6 as applied to claim 1 above**, Koohgoli as modified by Frixon disclose the claim invention except determining whether a collision is detected at the channel selected in said selecting, and, if a collision is detected, selecting a new channel by executing the method again at said scanning.

In the same field of endeavor, Lopez clearly shows and discloses a method and apparatus for determining collision when selecting a channel, and in case of detecting

collision in the selected channel, requesting a new channel and suggesting a new transmission channel (FIG. 2 and the summary of the invention in lines 46-67 of column 1 and lines 1-3 of column 2 where it particularly says, "in case of collision, transmission of a change of channel request to the first network...the change of channel request comprises...an identifier of...the number of times that request has been sent, a suggestion of transmission channel for the first network")

Therefore, it would have been obvious to a person with the ordinary skills in the art to apply the method and apparatus for detecting a collision in a selected channel and then requesting a new channel taught by Lopez in the channel selection method suggested by Koohgoli as modified by Frixon for purpose of transmitting data or signal on the best pre-examined available carrier channel. The proper motivation is to manage frequency channel resources.

6. **Claims 7 and 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi et al. (U.S. Patent # 7,206,840 B2)** (hereafter Choi) in view of **Frixon (U.S. Patent # 5,138,456)**.

Consider **claim 7**, Choi discloses an article comprising a storage medium having stored thereon instructions that, when executed by a computing platform, result in dynamic frequency selection in a wireless local area network by (FIG. 2, abstract, lines 64-67 of col. 3, and lines 7-12 of col. 4):

scanning available channels (FIG. 3 step 100: monitoring of channels; col. 4 lines

16-39);

measuring a received signal power level for the channels scanned in said scanning (abstract and col. 4 lines 40-67);

comparing the measured received signal power level to a threshold value to provide a difference (col. 6 lines 28-35 for threshold value -82dBm);

if the difference is greater than a predetermined value, then indicating the channel as occupied (lines 23-34 of col. 6 where it says, "the measurement of noise or interference level by 802.11 non-compliant devices...is detected and reported to the AP... The STA shall keep track of the CCA busy periods in order to report back the fractional period during which the CCA was busy out of the whole measurement duration."), otherwise indicating the channel as available (see FIG. 3 step 200: Selecting a New Channel By AP, and lines 11-13 of abstract where it says, "selecting one of the candidate channels based on the channel quality report for use in communication between the AP and the plurality of STAs");

However, Choi fails to disclose determining a larger gap between available channels; and selecting a channel within the larger gap.

In the same field of endeavor, Frixon discloses determining a larger gap between available channels; and selecting a channel within the larger gap (col. 4 lines 38-44).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time the invention was made to incorporate channel selection by choosing a channel(s) within larger frequency spacing between available channels as taught by Frixon to the channel selecting method and apparatus shown by Choi disclosed for

purpose of reducing and preventing interference by selecting a channel having a distance from its neighboring channels to provide a guard band between frequency channels.

Consider **claim 9 as applied to claim 7 above**, Frixon discloses said selecting includes selecting a channel at a midpoint within the larger gap (col. 4 lines 38-44).

Consider **claim 10 as applied to claim 7 above**, Choi as modified by Frixon disclose the claimed invention except in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a channel within the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

Consider **claim 11 as applied to claim 7 above**, Choi as modified by Frixon

disclose the claimed invention except in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a channel within a midpoint of the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel within a midpoint of the larger gap at a higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art would have expected Applicant's invention to perform equally well with either selecting a channel within midpoint of the larger gap at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is the matter of design choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

7. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi et al. (U.S. Patent # 7,206,840 B2)** (hereafter Choi) in view of **Frixon (U.S. Patent # 5,138,456)** further in view of **Lopez (U.S. Patent # 7,177,291 B1)**.

Consider **claim 12 as applied to claim 7 above**, Choi as modified by Frixon disclosed the claim invention except determining whether a collision is detected at the channel selected in said selecting, and, if a collision is detected, selecting a new channel by executing the method again at said scanning.

In the same field of endeavor, Lopez clearly shows and discloses a method and apparatus for determining collision when selecting a channel, and in case of detecting collision in the selected channel, requesting a new channel and suggesting a new transmission channel (see FIG. 2 and the summary of the invention in lines 46-67 of column 1 and lines 1-3 of column 2 where it particularly says, "in case of collision, transmission of a change of channel request to the first network...the change of channel request comprises...an identifier of...the number of times that request has been sent, a suggestion of transmission channel for the first network")

Therefore, it would have been obvious to a person with the ordinary skills in the art to apply the method and apparatus for detecting a collision in a selected channel and then requesting a new channel taught by Lopez in the channel selection method suggested by Choi as modified by Raff for purpose of transmitting data or signal on the best pre-examined available carrier channel. The proper motivation is to manage frequency channel resources.

8. **Claims 13 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi et al. (U.S. Patent # 7,206,840)** (hereafter Choi) in view of **Sugar et al. (U.S. Patent # 7,248,604 B2)** (hereafter Sugar) further in view of **Frixon (U.S. Patent # 5,138,456)**.

Consider **claim 13**, Choi clearly shows and disclose an apparatus comprising:
a transceiver (see FIG. 2 transmitter/receiver 24); and

a baseband processor (considered as CPU) wherein is capable of dynamically selecting a frequency on which to communicate via said transceiver on a wireless local area network (FIG. 2 and lines 64-67 of column 3 where it says, "Both the AP and STA may include ... a CPU 22, a transmitter/receiver 24, ... a random access memory (RAM) 30, a read-only memory (32)", and lines 7-12 of column 4 where it says, "The CPU 22 operates under the control of an operating system contained in the ROM 32 and utilizes RAM 30 to perform the frequency selection within a wireless local area network (WLAN), by enabling the AP to provide a new channel or wireless link for all stations (STAs) associated with its BSS.") by:

scanning available channels (FIG. 3 step 100: monitoring of channels; col. 4 lines 16-39);

measuring a received signal power level for the channels scanned in said scanning (abstract and col. 4 lines 40-67);

comparing the measured received signal power level to a threshold value to provide a difference (col. 6 lines 28-35 for threshold value -82dBm);

if the difference is greater than a predetermined value, then indicating the channel as occupied (lines 23-34 of col. 6 where it says, "the measurement of noise or interference level by 802.11 non-compliant devices...is detected and reported to the AP... The STA shall keep track of the CCA busy periods in order to report back the fractional period during which the CCA was busy out of the whole measurement duration."), otherwise indicating the channel as available (see FIG. 3 step 200: Selecting a New Channel By AP, and lines 11-13 of abstract where it says, "selecting one of the

candidate channels based on the channel quality report for use in communication between the AP and the plurality of STAs”);

However, Choi fails to disclose explicitly the CPU is a baseband processor or include a baseband processor.

In the same field of endeavor, Sugar clearly show and disclose an apparatus comprising a transceiver; and a baseband processor to couple to said transceiver (see FIG. 3 and lines 50-62 of col. 3)

Therefore, it would have been obvious to a person with the ordinary skills in the art to include a baseband processor in wireless communications apparatus taught by Sugar in the CPU of wireless apparatus disclosed by Choi for purpose of choosing wireless channels and processing the baseband signals in a wireless network.

However, Choi as modified by Sugar fail to disclose determining a larger gap between available channels; and selecting a channel within the larger gap.

In the same field of endeavor, Frixon discloses determining a larger gap between available channels; and selecting a channel within the larger gap (col. 4 lines 38-44).

Therefore, it would have been obvious to a person or ordinary skills in the art at the time the invention was made to incorporate channel selection by choosing a channel(s) within larger frequency spacing between available channels as taught by Frixon to the channel selecting method and apparatus shown by Choi as modified by Sugar for purpose of reducing and preventing interference by selecting a channel having a distance from its neighboring channels to provide a guard band between frequency channels.

However, Choi as modified by Sugar and further modified by Frixon fail to disclose in the event there are two or more larger gaps, selecting a larger gap at a higher frequency; and selecting a channel from a channel indicated as available within the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

Consider **claim 16 as applied to claim 13 above**, Choi as modified by Sugar further modified by Frixon disclosed said baseband processor is further capable of dynamically selecting a frequency on which to communicate via said transceiver by determining a larger gap between available channels (see Frixon, col. 4 lines 38-44).

However, Choi as modified by Sugar further modified by Frixon fails to disclose in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a channel within the larger gap at a higher frequency and wherein said selecting includes selecting a channel within a

midpoint of the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented, or selecting a channel within midpoint of the larger gap at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an advantage, is used for a particular purpose, or solves a stated problem.

9. **Claims 17 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi et al. (U.S. Patent # 7,206,840)** (hereafter Choi) in view of **Sugar et al. (U.S. Patent # 7,248,604 B2)** (hereafter Sugar) further in view of **Pope, Jr. et al. (U.S. Patent # 6,654,616 B1)** (hereafter Pope) and further in view of **Frixon (U.S. Patent # 5,138,456)**.

Consider **claim 17**, Choi clearly shows and disclose an apparatus comprising:
a transceiver (see FIG. 2 transmitter/receiver 24); and
a baseband processor (considered as CPU) wherein is capable of dynamically

selecting a frequency on which to communicate via said transceiver on a wireless local area network (FIG. 2 and lines 64-67 of column 3 where it says, "Both the AP and STA may include ... a CPU 22, a transmitter/receiver 24, ... a random access memory (RAM) 30, a read-only memory (32)", and lines 7-12 of column 4 where it says, "The CPU 22 operates under the control of an operating system contained in the ROM 32 and utilizes RAM 30 to perform the frequency selection within a wireless local area network (WLAN), by enabling the AP to provide a new channel or wireless link for all stations (STAs) associated with its BSS.") by:

scanning available channels (FIG. 3 step 100: monitoring of channels; col. 4 lines 16-39);

measuring a received signal power level for the channels scanned in said scanning (abstract and col. 4 lines 40-67);

comparing the measured received signal power level to a threshold value to provide a difference (col. 6 lines 28-35 for threshold value -82dBm);

if the difference is greater than a predetermined value, then indicating the channel as occupied (lines 23-34 of col. 6 where it says, "the measurement of noise or interference level by 802.11 non-compliant devices...is detected and reported to the AP... The STA shall keep track of the CCA busy periods in order to report back the fractional period during which the CCA was busy out of the whole measurement duration."), otherwise indicating the channel as available (see FIG. 3 step 200: Selecting a New Channel By AP, and lines 11-13 of abstract where it says, "selecting one of the candidate channels based on the channel quality report for use in communication

between the AP and the plurality of STAs");

However, Choi fails to disclose explicitly the CPU is a baseband processor or include a baseband processor.

In the same field of endeavor, Sugar clearly show and disclose an apparatus comprising a transceiver; and a baseband processor to couple to said transceiver (see FIG. 3 and lines 50-62 of col. 3)

Therefore, it would have been obvious to a person with the ordinary skills in the art to include a baseband processor in wireless communications apparatus taught by Sugar in the CPU of wireless apparatus disclosed by Choi for purpose of choosing wireless channels and processing the baseband signals in a wireless network.

However, Choi as modified by Sugar fail to disclose the apparatus comprises an omnidirectional antenna.

In the same field of endeavor, Pope clearly shows and discloses an omnidirectional antenna with a wireless local area transceiver (FIG. 1, FIG. 2 and lines 29-36 of col. 4)

Therefore, it would have been obvious to a person with ordinary skills in the art to include an omnidirectional antenna as taught by Pope to the wireless local area network method and apparatus as displayed by Choi as modified by Sugar for purpose of transmitting/receiving signal with a better SNR gain in a wireless communication network. The proper motivation is to select the optimum frequency channels.

However, Choi as modified by Sugar and further modified by Pope fail to disclose determining a larger gap between available channels; and selecting a channel within the

larger gap.

In the same field of endeavor, Frixon discloses determining a larger gap between available channels; and selecting a channel within the larger gap (col. 4 lines 38-44).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time the invention was made to incorporate channel selection by choosing a channel(s) within larger frequency spacing between available channels as taught by Frixon to the channel selecting method and apparatus shown by Choi as modified by Sugar and further modified by Pope for purpose of reducing and preventing interference by selecting a channel having a distance from its neighboring channels to provide a guard band between frequency channels.

However, Choi as modified by Sugar modified by Pope and further modified by Frixon fail to disclose in the event there are two or more larger gaps, selecting a larger gap at a higher frequency; and selecting a channel from a channel indicated as available within the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an

advantage, is used for a particular purpose, or solves a stated problem.

Consider **claim 20 as applied to claim 17 above**, Choi as modified by Sugar modified by Pope and further modified by Frixon disclosed said baseband processor is further capable of dynamically selecting a frequency on which to communicate via said transceiver by determining a larger gap between available channels (see Frixon, col. 4 lines 38-44).

However, Choi as modified by Sugar modified by Pope and further modified by Frixon fails to disclose in the event there are two or more larger gaps, selecting a larger gap at a higher frequency, wherein said selecting includes selecting a channel within the larger gap at a higher frequency and wherein said selecting includes selecting a channel within a midpoint of the larger gap at a higher frequency.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select a channel at higher frequency when there are two or more larger gaps presented. One of ordinary skill in the art, would have expected applicant's invention to perform equally well with either selecting a channel at higher frequency or lower frequency when there are two or more larger gaps between channels presented, or selecting a channel within midpoint of the larger gap at higher frequency or lower frequency when there are two or more larger gaps between channels presented because choosing either higher and lower frequency is a matter of Design Choice for the channels within close range of frequencies. Furthermore, applicant has not disclosed that selecting a channel at higher frequency provides an

advantage, is used for a particular purpose, or solves a stated problem.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Allahyar Kasraian whose telephone number is (571) 270-1772. The Examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 5:00 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*/Allahyar Kasraian/
Examiner, Art Unit 2617*

A.K./ak

/Rafael Pérez-Gutiérrez/

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Supervisory Patent Examiner, Art Unit 2617

October 21, 2008